

CLAIMS

1. An echographic probe with sector scanning comprising a tubular body (1, 2) at least partly housed in its front end, a transducer (11) designed to emit an incident ultrasonic wave focused towards the structures to be examined and to receive ultrasonic waves generated by these structures under the effect of this incident wave, this transducer (11) being rotatably mounted inside the probe around an axis of rotation and being coupled with actuating means (4) so as to be able to perform displacements at least partly in rotation relatively to the probe in order to obtain a sector scan of the structure to be examined,
5
10 characterized in that the transducer (11) comprises a piezoelectric assembly (15) having power for focusing the emitted beams and adjacent to this assembly, a layer (20) made in a material providing good transmission of ultrasonic waves, this layer (20) having, opposite to said piezoelectric component, a convex axisymmetric outer surface, the generatrix of which has a curved shape and the director axis of which corresponds to the axis of rotation of the transducer so as to be able to come into contact with the structure to be examined.
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2. The probe according to claim 1,
20 characterized in that the aforesaid generatrix has a circular shape.
3. The probe according to any of claims 1 and 2,
characterized in that the aforesaid axisymmetric surface is spherical.
- 25 4. The probe according to any of the preceding claims,
characterized in that the transducer (11) comprises a permanent magnet (18, 19) cooperating with a Hall effect sensor integral with the body in order to provide detection of the position of said transducer (11).

5. The probe according to any of the preceding claims,
characterized in that the transducer (11) is rotatably mounted on the tubular
body along an axis of rotation and comprises a first permanent magnet (17)
5 located opposite the piezoelectric component (15) relatively to said axis,
contactless actuation of said transducer (11) being provided by means of a
second permanent magnet (7) mounted on a rotary driving plate (6) which
performs a circular trajectory centered perpendicularly to said axis of rotation.

10 6. The probe according to claim 5,
characterized in that the aforesaid transducer (11) and the aforesaid drive plate
(6) provided with the aforesaid second permanent magnet (7) are positioned in
two compartments (3, 8) of the body, separated by a partition (9), respectively.

15 7. The probe according to claim 6,
characterized in that the aforesaid partition (9) has a spherical shape concentric
with the aforesaid transducer (11).

8. The probe according to any of the preceding claims,
20 characterized in that said tubular body is with double walls, the seal between
both walls (1, 2) at the orifice of the body crossed by the transducer (11) is
provided by a cylindrical gasket (22) including a radial flange (23) directed
inwards, the interior edge of which will rest on the spherical surface of the
transducer (11).

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9. The probe according to any of claims 1 to 3,
characterized in that it comprises an at least partially spherical transducer (26)
mounted around an axis parallel to the longitudinal axis of the body (25) of the
probe, this transducer including a piezoelectric element (27) centered
30 perpendicularly to the axis of rotation of the transducer (26); the front end of

the body of the probe ending as a bevel in order to delimit an oblique aperture exposing a useful area of the transducer (26) centered transversally to the longitudinal axis of the body (25).

- 5 10. The probe according to any of claims 1 to 8,
characterized in that the aforesaid transducer (11, 26) is mounted on an
actuation mechanism with which an arc-shaped scan may be obtained.